

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Sourour

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Docket No.: 4015-784

Title: Multipath Interference Reduction for a  
CDMA System

Examiner: B. Deppe

Group Art Unit: 2634

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Laura A. Wade

**RESPONSE PURSUANT TO 37 C.F.R. § 1.111**

This paper is being filed in response to the Office Action mailed February 17, 2004  
having a reply due date of May 17, 2004. Reconsideration and reexamination are respectfully  
requested in light of the amendments and remarks below. While no fees should be required for  
entry of this response, if any fees or charges are required, the Commissioner is hereby  
authorized to charge them to Deposit Account 18-1167.

WRITTEN DESCRIPTION

Please amend the paragraph beginning at p. 13, line 28 as follows:

A1  
Figure 7 provides details for one embodiment of the modified RAKE receiver 200 introduced in Figure 5. The primary RAKE 202 includes one or more primary RAKE fingers 210 and an associated summing circuit 212. The interference estimation RAKE 204 includes one or more interference estimators 214, along with a corresponding number of scaling multipliers 216, and a summing circuit 218. As illustrated, the RAKE receiver 200 of the present invention is configured to accommodate three propagation paths (paths 1, 2, and 3). It should be understood that the RAKE receiver 200 may be configured for any desired number of propagation paths.

Please insert the following paragraph prior to the paragraph beginning at p. 16, line 7:

A2  
Figure 7A depicts another embodiment of the modified RAKE receiver 200. According to this embodiment, the scaled multipath interference estimates from scaling multipliers 216 are subtracted on a per primary RAKE finger basis by differencing circuits 217, 219, 221. The multipath interference-compensated primary RAKE finger signals are then combined by summing circuit 206 to form a combined output signal of interest.

Please amend the abstract as follows:

A3  
cont  
A method and system reduce multipath signal interference in a CDMA receiver. The CDMA receiver ~~comprising~~ including parallel first and second RAKE receivers receives a multipath signal. The first RAKE receiver includes a number of individual RAKE fingers, each operating with a defined finger delay matched to a propagation path delay. The output signal from each RAKE finger includes multipath interference. The second RAKE receiver includes a group of RAKE fingers corresponding to each RAKE finger in the first RAKE receiver. Each group of RAKE fingers is configured to produce an estimate of the multipath interference in the

AB  
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output signal generated by the corresponding RAKE finger in the first RAKE receiver. The estimated multipath interference signals are scaled, and then subtracted from the RAKE finger outputs from the first RAKE receiver to reduce multipath interference. Scaling coefficients are adjusted to ensure that such subtraction effectively reduces multipath interference.